

2021
PHYSIOLOGY
[HONOURS]
Paper : IX

Full Marks : 80

Time : 4 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***Answer all the questions.****GROUP-A**

1. Answer any **seven** questions: 1×7=7
- a) What do you mean by a normal distribution?
 - b) What is a discrete variable?
 - c) Write one application of fluorescence microscope.
 - d) Define 'Median'.
 - e) Name any two greenhouse gases.
 - f) Define BMI.
 - g) What do you mean by 1 Lux?
 - h) State the cause of Minamata disease.
 - i) Define 'homeostasis'.

[Turn over]

2. Answer any **six** questions: 2×6=12
- a) What is Caisson's disease?
 - b) What are mutagens? Give one example each of physical and chemical mutagens. 1+($\frac{1}{2}$ + $\frac{1}{2}$)=2
 - c) Name one cholinergic agonist and one adrenergic antagonist drug.
 - d) What do you mean by RAM and ROM?
 - e) What is EPOC?
 - f) What do you mean by LD₅₀?
 - g) What do you mean by 'Standard Error of Mean'?
 - h) State two applications of MRI in physiological studies.

GROUP-C

3. Answer any **three** questions: 7×3=21
- a) What is 'Null hypothesis'? When is 'Chi-square test' used for analysis of biological data? 4+3=7
 - b) Describe the effects of arsenic pollution on human health. 7

c) Name any two nerve gases. Discuss about the effects of nerve gases on the human body.

$$2+5=7$$

d) Describe the effects of training on physical performance.

$$7$$

e) State the principle and uses of a compound microscope. Discuss briefly about the working principle of colorimeter.

$$(2+2)+3=7$$

d) Discuss briefly about the factors that determine the VO_2 max of an athlete. What do you mean by modified 'Harvard's Step Test'?

$$7+3=10$$

e) Write briefly about the clinical uses of USG PET scan.

$$5+5=10$$

f) Define xenobiotics. What is noise? Describe the effects of noise pollution on the human body.

$$2+2+6=10$$

GROUP-D

4. Answer any **four** questions: $10 \times 4 = 40$

a) Write short notes on:

i) CPU

ii) 'OR' Logic gates. $5+5=10$

b) Discuss briefly about any two heat stress indices. What is dynamic anthropometry?

$$(3+3)+4=10$$

c) What are food adulterants? Name any two common adulterants found in milk and turmeric powder. How can you detect these adulterants by simple biochemical test?

$$2+(1+1)+(3+3)=10$$